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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/730,666	12/08/2003	Chiyoko Sato	09792909-5745	4843

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SONNENSCHN NATH & ROSENTHAL LLP
P.O. BOX 061080
WACKER DRIVE STATION, SEARS TOWER
CHICAGO, IL 60606-1080

EXAMINER

CANNING, ANTHONY J

ART UNIT PAPER NUMBER

2879

DATE MAILED: 08/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/730,666

Applicant(s)

SATO ET AL.

Examiner

Anthony J. Canning

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 5 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 8-10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Acknowledgement of Election

1. The applicant's election of Group I, claims 1-7, was received and entered on 5 August 2005.

Claim Rejections - 35 USC § 112

2. Claim 3 recites the limitation "the organic layers" in line 9. There is insufficient antecedent basis for this limitation in the claim. The examiner proposes replacing "the organic layers" with "the organic layer."

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 2, and 6 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamazaki (U.S. 2002/0030440 A1).
5. As to claim 1, Yamazaki discloses a display apparatus including: a plurality of lower electrodes patterned on a substrate (see Fig. 8B, items 700 and 711; paragraphs 0123 and 0124) on the basis of each pixel (see Fig. 8B, item 711; paragraph 0124); an auxiliary wiring composed

Art Unit: 2879

of the same layer as that of the lower electrodes (see Fig. 8B, items 711 and 715; paragraph 0124; a portion of the wiring is on insulating layer 613, see Fig. 7 paragraph 0115, the pixel electrode, 711, is also formed on layer 613) and disposed in the state of being insulated from the lower electrodes (layer 613 in figure 7 insulates the wiring, 715, from the pixel electrodes 711); an insulating film formed on the substrate (see Fig. 7, item 613; paragraph 0115), the insulating film having pixel openings for exposing central portions of the lower electrodes (see Fig. 8B, the insulating film 613, not labeled, stops where the pixel electrode, 711, is formed) and connection holes reaching the auxiliary wiring (see Fig. 8B, the area where item 714 connects down through the insulating layer, 613 not labeled, to the wiring, 715); an organic layer patterned in the state of covering bottom portions of the pixel openings (see Fig. 8B, item 713; paragraphs 0118 and 0124; paragraph 0118 says there are no limitations put on what material the EL layer so long as it's low molecular or a polymer, and can therefore be an organic polymer); and an upper electrode covering the organic layer and connected to the auxiliary wiring through the connection holes (see Fig. 8B, item 714; paragraph 0124; see region where item 714 travels through the insulation layer (613 not shown) and connects with wiring 715, the left hand side of the figure).

6. As to claim 2, Yamazaki discloses a display apparatus as set forth in claim 1. Yamazaki further discloses that the substrate includes an inter-layer insulating film covering a thin film transistor substrate provided with thin film transistors for driving the pixels (see Fig. 7, items 608, 620, 621, 622, and 623; paragraphs 0112-0114), and each of the lower electrodes is connected to each of the thin film transistors through a connection hole formed in the inter-layer insulating film (see Fig. 7, items 606 and 609; paragraph 0114).

7. As to claim 6, Yamazaki discloses a display apparatus as set forth in claim 1, wherein the upper electrode is light-transmitting (see Fig. 7, item 612; paragraph 0116; indium tin oxide is a transparent material commonly used for electrodes in display devices).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki (U.S. 2002/0030440 A1) in view of Sakaguchi et al. (U.S. 6,366,016 B1) and in further view of Shibata et al. (U.S. 6,147,451).

10. As to claim 3, Yamazaki discloses a display apparatus as set forth in claim 2. Yamazaki further discloses that the organic layer is patterned in the state of covering the bottom portions of the pixel openings (see Fig. 8B). Yamazaki fails to disclose having end portions partly

overlapping on each other between the adjacent pixels, and the upper electrode covers the organic layer and is connected to the auxiliary wiring through the connection holes between the organic layer.

Sakaguchi et al. disclose an organic electroluminescent display wherein the end portions of the organic layer overlap one another (see Fig. 8a, items 4 and 26; column 5, lines 31-33). Sakaguchi et al. further disclose that this keeps the end portions of the organic electroluminescent layer in each pixel from being exposed (column 5, lines 25-8).

Shibata et al. disclose that the upper electrode layer is connected to auxiliary wiring through the organic layer outside of the light emitting region (see Fig. 10, the portion of layer 111 that is connected to item 103 is what the examiner interprets as auxiliary wiring connecting the upper electrode, 111). The auxiliary wiring through the organic layer outside of the light-emitting region allows the upper electrode to be electrically connected to a thin film transistor.

Therefore, it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to modify the organic electroluminescent display of Yamazaki et al. to include having end portions of the organic layer partly overlapping on each other between the adjacent pixels, as taught by Sakaguchi et al., to keep the end portions of the organic electroluminescent layer from being exposed, and to upper electrode covers the organic layer and is connected to the auxiliary wiring through the connection holes between the organic layer, as taught by Shibata et al., for the added benefit of having the upper electrode connected to a thin film transistor outside of the light emitting region.

11. Claims 4, 5, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki (U.S. 2002/0030440 A1) in view of Sakaguchi et al. (U.S. 6,366,016 B1) and in further view of Shibata et al. (U.S. 6,147,451) and Tsuno et al. (U.S. 6,195,034 B1).

12. As to claims 4 and 5, Yamazaki, Sakaguchi et al. and Shibata et al. disclose a display apparatus as set forth in claim 3. Yamazaki, Sakaguchi et al. and Shibata et al. fail to disclose that the lower electrodes have a three-layer structure including a reflective metallic material layer sandwiched between conductive oxide material layers.

Tsuno et al. disclose that an electrode that has a three-layer structure including a reflective metallic material layer sandwiched between conductive oxide material layers (column 11, lines 56-67; column 12, lines 1-7). This three-layered structure absorbs radio waves and is also transparent (column 1, lines 4-7).

Therefore, it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to modify the organic electroluminescent display of Yamazaki et al. to include that the lower electrodes have a three-layer structure including a reflective metallic material layer sandwiched between conductive oxide material layers, as taught by Tsuno et al., for the added benefit that the lower electrode will absorb radio waves and will be light transmissive.

13. As to claim 7, Yamazaki, Sakaguchi et al., Shibata et al. and Tsuno et al. disclose a display apparatus as set forth in claim 4. Yamazaki further discloses that the lower electrodes are formed of a light-reflective material (paragraph 0114, aluminum is a light reflective material). Using a light reflective material for the lower electrode will direct more light towards the viewer, thereby improving picture brightness.

Prior Art

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


Igarashi et al. (U.S. 4,792,723) teaches an electroluminescent panel with a three layered electrode structure that reflects light.

Contact Information

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony J. Canning whose telephone number is (571)-272-2486. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh D. Patel can be reached on (571)-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Anthony Canning 

11 August 2005


**ASHOK PATEL
PRIMARY EXAMINER**